

No. 12.— *The Phoridae of Grenada.*

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CONTRIBUTIONS FROM THE ENTOMOLOGICAL LABORATORY OF THE
BUSSEY INSTITUTION, HARVARD UNIVERSITY, No. 144.

THE small island of Grenada lies at the southern end of the windward group in the West Indies. In spite of its proximity to Trinidad which supports a continental fauna, the insect inhabitants seem rather limited in number of species. When I visited this island in 1910 for another purpose in behalf of the Museum of Comparative Zoölogy, I had the opportunity to collect a number of insects some of which belong to the Phoridae. I was particularly interested in these small flies at the time, and brought back specimens representing nine species. Mr. H. H. Smith collected many insects in Grenada some twenty years before and obtained several species two of which I failed to find in 1910.

The following list includes the known species from the island including three which are new to science.

PARASPINIPHORA SCUTELLATA Brues.

The type of this species which is a female is from Grenada. I collected a male in 1916, which differs in having the anterior scutellar bristle much smaller than the posterior one. This is probably a sexual character.

DOHRNIPHORA VENUSTA Coquillett.

This is common in Grenada as in most parts of the American tropics. From specimens collected in Grenada and St. Vincent by H. H. Smith it was redescribed as *divaricata* by Aldrich. It was also obtained in Grenada by Busck and myself.

DOHRNIPHORA ALLENI, sp. nov.

Type.—M. C. Z. 7,005. Grenada, C. T. Brues.

♂. Length 3.5 mm. Black; pleurae and base of middle coxae piceous, antennae fuscous, palpi reddish brown; legs dull brownish

yellow; hypopygial projection yellow; wings tinged with brown, venation piceous. Front as broad as high; carinate above the median pair of ocellar bristles, the carina curving down laterally below the lateral ocellar bristles; postantennal pair of bristles close together, not far below the level of the next row which form a nearly equidistant series curved downwards medially; upper row slightly curved upwards medially; ocelli not on a tubercle; all frontal bristles large. Postocular cilia enlarged at upper two thirds of eye. Cheeks each with two macrochaetae. Antennae small, nearly round; arista nearly twice as long as the front. Palpi not enlarged, with stout bristles below on apical third. Mesonotum shining, pubescent, slightly bristly along the sides; one pair of dorsocentral bristles. Scutellum short and broad; posterior pair of bristles far apart and very long, anterior pair much smaller. Propleurae hairy, with two



Fig. 1.—*Dohrniphora alleni* Brues. Wing.

bristles near the coxa and one large one midway between the coxa and spiracle; also a bristle above the spiracle; mesopleura not hairy. Abdomen with second and sixth segments elongated; third, fourth, and fifth subequal in length; surface dull except at apex, without hairs except a few on the sixth segment which also bears some bristles on posterior edge; hypopygium rather small; projecting piece slender, bearing only a few very small hairs towards apex. Legs stout; front tibia with a small bristle just beyond basal third, but no others; middle tibiae with a pair at basal third and a small one on anterior surface just before apex; anterior surface on apical third with transverse comb-like rows of very short bristles; hind tibiae with a shorter patch of similar comb-like rows at apex, without bristles or setulae before apex although the hairs are larger on the seam and just outside it on the apical half of the tibia; hind femur without a patch of short bristles on inner side at base. Wings long and narrow; two and one half times as long as broad; costa extending to the middle or barely beyond; first section of the costa twice as long as second and third together, third nearly as long as second; fork rather acute; fourth vein feebly curved, recurved at apex; fifth nearly straight; sixth sinuate; seventh strongly curved basally; costal cilia rather short, about as long as the humeral cross-vein. Halteres light fuscous.

Named for Dr. G. M. Allen, my companion in Grenada on the trip when the specimen was collected.

Since this was written I have seen additional specimens from Falls Church, Va., collected by Mr. Nathan Banks.

This species resembles *D. incisuralis* and *D. venusta* in the presence of pale color on the body, but is more closely similar structurally to *D. concinna* and its relatives except in the bare hind tibiae. It is related to *D. setigera* Malloch, but is without setulae on the hind tibiae, has shorter costal cilia and paler halteres.

The species of *Dohrniphora* known from North and Central America may be distinguished by the following key:—

1. Front tibiae with a serial row of four or five small, erect setae of subequal size; no bristle on prothorax just above spiracle. 2.
Front tibiae with one bristle at basal third and without additional setulae, prothorax with a bristle just above the spiracle; mesopleura entirely bare. 5.
2. Head tibiae without any setulae. 3.
Hind tibiae with four or five serially arranged setulae on outer side. *D. incisuralis* Loew.
3. Black; legs brown, front pair varied with yellowish.

D. knabi Malloch.

Thorax yellow, at most with the dorsum darker, hind femora of male with a small patch of bristles on inner side near base. 4.

4. Antennae not enlarged, of normal size. *D. venusta* Coquillett.
Antennae enlarged in both sexes; those of male pyriform.

D. dispar Enderlein.

5. Hind tibiae with some minute setulae on inner, outer, or on both sides; palpi and legs usually black. 6.

Hind tibiae without setulae before apex; palpi and legs yellowish brown. *D. alleni* Brues.

6. Hind tibiae with setulae only on outer side; male antennae not noticeably enlarged. 7.

Hind tibiae with a series of setulae on inner side as well as on outer; male antennae much enlarged. *crassicornis* Meigen.

Hind tibiae with a series of short setulae inside the seam; legs pale. *D. setigera* Malloch.

7. Front quadrate; postantennal bristles below the next row by more than half the distance separating this row from the upper row; halteres black; sixth segment of male strongly bristly.

D. cimbicis Aldrich.

Front distinctly wider than long; postantennal bristles below

the next row by less than half the distance separating this row from the upper row; halteres pale; sixth segment of male faintly bristly (*nitidifrons* Brues).....*D. concinna* Meigen.

HYPOCERA GRENADENSIS Brues.

The type is from Grenada, collected by H. H. Smith.

CONICERA NEOTROPICA Brues.

Originally described from a specimen taken in Grenada by H. H. Smith.

BECKERINA NEOTROPICA, sp. nov.

Type.—M. C. Z. 7,006. *Paratype*.—Grenada; Grand Etang, 2,500 ft.

♀. Length 2.6 mm. Pale brownish yellow; front black except near lower margin; abdomen infuscated at base and with blackish apical bands on the segments; legs pale yellowish, hind femora blackened at tip; wings slightly tinged with yellow; halteres with pale stalk and fuscous club; antennae fuscous; palpi pale yellow. Front with ocellar tubercle and well-marked median groove; almost as high as wide, but appearing shorter as the lower edge is more strongly produced medially than usual. Two postantennal bristles which are slightly curved upwards although nearly erect; next row complete, of four bristles, forming a line curved down medially, with the median pair farther from one another than from the lateral one, all close to the lower margin; next row similarly curved, of four nearly equidistant bristles; ocellar row of large bristles as are the others; in addition to the large bristles there are scattered small ones especially noticeable along the lower edge, with two somewhat larger just above the pair of postantennals. Postocular cilia large, cheeks each with three macrochaetae. Antennae small, round, arista nearly twice as long as the front. Palpi small, strongly bristled on apical half, weakly so nearer the base. Mesonotum with six rather small bristles in a nearly straight line near posterior margin. Scutellum short, transverse, with four large, equally strong bristles on the margin, the median pair approximated, much less than twice as far from one another as from the adjacent lateral one. Propleura bristly behind, with two large bristles next

the coxa and four less enlarged above near the spiracle; a bristle directly above spiracle. Mesopleura entirely bare. Abdomen with a tuft of bristles at sides of second segment and a row of minute ones along the posterior margin of each segment. Legs large, but not

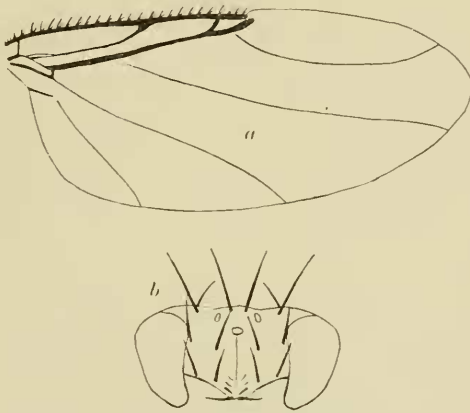


Fig. 2.—*Beckerina neotropica* Brues. a, wing; b, front showing chaetotaxy.

especially stout, all tibiae without bristles or setulae before apex; hind tibiae but not middle ones with a small patch of transverse comb-like rows of bristles inside at apex; tarsi slender. Wings small, broad basally, but much narrowed beyond middle; costa extending to slightly beyond middle of wing, the third vein widely separated from the costa; costal cilia rather short, closely placed; first section of costa scarcely longer than the second and third together, second twice as long as third, fork not very acute, the cell thus formed rather large, fourth vein evenly bent, not recurved at tip; fifth vein nearly straight; sixth faintly bisinuate; seventh nearly straight.

This peculiar species is probably referable to *Beckerina* although the bristling of the front is complete, with four bristles in the lower row, not two as occur in *B. orphnephiloides* Malloch. I have not seen the other member of the genus, *B. umbrimargo* Becker of Europe, but as nearly as I can gather from Becker's description the frontal chaetotaxy of that species is similar to the present one from Grenada. The tibiae are without bristles as in *Aphiochaeta* and do not even show the small setulae usually present on the hind pair in that genus.

APHIOCHAETA CARIBBAEA, sp. nov.

Type.—M. C. Z. 7,007. Grenada, H. H. Smith.

♀. Length 2.2 mm. Dull yellow, with the front and antennae black, and the abdomen much infuscated, especially at the base and apex, but with the apical margins of all the segments pale; legs pale yellowish, the posterior femora darkened at tips; wings with a yellowish cast, veins light brown, the light veins strongly colored; halteres pale brown. Front quadrate, with strong bristles; four proclinate bristles, the lower pair nearly as large as the upper and half as far apart; upper pair occupying nearly one third of the width of the front, far above the lower pair and a little above the inner bristles of the lower reclinate row; outer bristle of the lower reclinate row next to the eye and well above the inner bristle which is far from the eye; upper reclinate row of four equidistant bristles with the median pair slightly lower than the lateral bristles; ocellar tubercle prominent; median frontal groove rather indistinct; cheeks each with a pair of bristles and several small ones running up the inner orbit toward the antennae. Antennae rather small; arista strongly pubescent, scarcely twice as long as the height of the front; palpi large, compressed, with several large bristles below on apical third and some much smaller ones before these. Mesonotum somewhat shining, the dorsocentral macrochaetae present, with not much larger than a row of smaller bristles that extends between them. Scutellum subtriangular, with four large, equal bristles. Propleura with several rather slender bristles next the front coxa and some smaller ones above, several scattered over the disc and several next the spiracle; mesopleura with a patch of fine hair-like bristles above and one much larger one at the posterior edge of the group of small ones. Although much larger than the others, this bristle is not so large as in some other species like *A. juli*. Abdomen with distinct bristles at the sides of the second segment. Legs rather stout; fore tarsi slender; hind tibiae with very small cilia on the basal half, those on the apical half moderately well developed although delicate and placed far apart. Wings long and narrow, the costa extending well beyond the middle, costal cilia quite short, especially at the base; first section of costa, barely shorter than the second and third combined; second three times as long as the third; fork of third vein moderately acute; fourth vein gently curved at both base and apex; fifth almost straight; sixth slightly bisinuate; seventh long, nearly straight.

This is related to *A. arcuata* Malloch from the eastern United States, but is easily separable by the chaetotaxy of the front and by the fact that only one mesopleural bristle is large. In the latter respect it resembles *A. juli* Brues and *A. perdita* Malloch from both of which it is otherwise very different.

APHIOCHAETA MAGNIPALPIS Aldrich.

This species was described from specimens taken by H. H. Smith in St. Vincent and Grenada. I collected it again in Grenada. It is a peculiar little species with the mesopleura bare above and the front tarsi noticeably enlarged, especially in the male. It may be easily recognized by the bare, greatly enlarged palpi of the male and by the almost parallel course of the fifth and sixth veins in the wing.

APHIOCHAETA AUREA Aldrich.

Originally described by Aldrich from specimens obtained by H. H. Smith in St. Vincent, but also collected by him in Grenada. It appears to be a common species in Grenada as I took numerous specimens of each sex in the high central part of the island.

APHIOCHAETA AUREA SETIGERA, subsp. nov.

Type.—M. C. Z. 7,008. Grenada, H. H. Smith.

♀. Length 2 mm. Very similar to the typical *A. aurea* Aldrich, but with a distinct patch of very small bristles at the upper angle of the mesopleura; these are not numerous, but always present. It also differs in having the wings without the deep yellow cast and the abdomen without the brilliant orange color usually so noticeable near the center of the abdomen in the typical form.

Type and three paratypes from Grenada, B. W. I. (H. H. Smith). Two were taken at 500 ft. altitude and the altitude is not indicated on the other labels.

This is so similar to *A. aurea* that it can hardly be considered as a distinct species in spite of the bristly mesopleura which is ordinarily a most satisfactory character. I suspect that it is characteristic of the lower and drier hills while *A. aurea* is restricted to the higher, moist mountain region as the specimens of the latter which I have labeled as to altitude came from stations at 1,000, 1,500, and 2,500 feet.

APHIOCHAETA SCALARIS Loew.

A common, widespread species in the warmer parts of America. Taken in Grenada by both Smith and myself. The specimens in both lots are rather small but otherwise typical.

APHIOCHAETA SUBFLAVA Malloch.

Of this species described from Porto Rico, I took a number of specimens in Grenada. It is very close to *A. scalaris* and quite possibly not entitled to specific rank.

PULICIPHORA VENATA Aldrich.

The male of this species was described from a specimen collected by H. H. Smith in St. Vincent. I found both sexes to be very abundant at the Grand Etang in Grenada at an altitude of 2,500 feet. The males were to be seen running on the inside of the glazed windows of the house and the females were attracted in numbers to traps placed out of doors. The traps consisted of glass jars sunk into the ground in the forest and baited with chicken bones. On visiting the jars, the Puliciphoras were found running over the surface of the glass and bait to which they were undoubtedly attracted by the carrion-like odor. Whether they oviposited in the material could not be determined and there was no opportunity to attempt rearing them at the time.

I have not undertaken to describe the female as it is very similar to those of several other species and the genus needs critical study. It differs from *P. borinquensis* Wheeler from Porto Rico in its broader and shorter thorax and in the more complete chaetotaxy of the head. From the Mexican *P. incerta* Silvestri of which I have seen no specimens, it appears to differ in the same characters, as well as in the form of the abdominal tergites.